



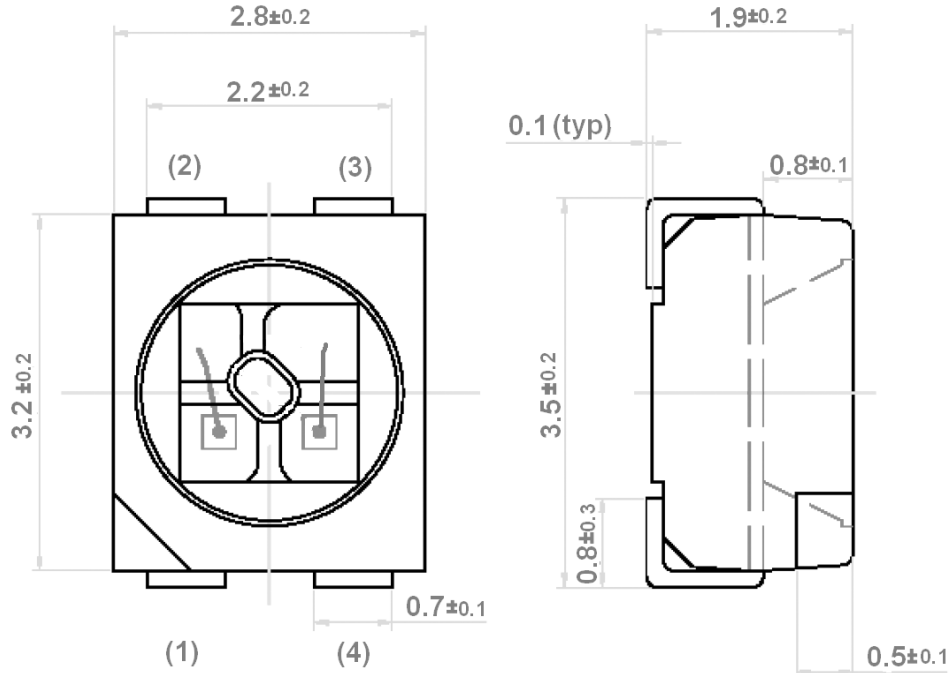
American Opto Plus LED

L-955XXC Series

3.2 x 2.8 x 1.9mm BICOLOR SMD

- ❖ 3.2 x 2.8 x 1.9mm Bicolor SMD
- ❖ Wide viewing angle
- ❖ Compatible to IR-reflow soldering and TTW soldering

PACKAGE DIMENSIONS



(1) Chip #1 – Cathode
(2) Chip #1 – Anode

(3) Chip #2 – Cathode
(4) Chip #2 – Anode

Notes: Units in millimeters. Tolerance is ± 0.25mm unless otherwise specified.

| Part Number | Color / Material | Dominant Wavelength (λ _D) | Viewing Angle |
|-------------|------------------------------------|---------------------------------------|---------------|
| L-955UEUGC | Red AlInGaP Green AlInGaP | 625 nm / 570 nm | 120° |
| L-955LILGC | Red AlInGaP Green AlInGaP | 632 nm / 570 nm | |
| L-955LILPGC | Red AlInGaP True Green InGaN | 632 nm / 525 nm | |
| L-955LIUYC | Red AlInGaP Yellow AlInGaP | 632 nm / 587 nm | |
| L-955UYLBC | Yellow AlInGaP Blue InGaN | 587 nm / 470 nm | |
| L-955UYLPGC | Yellow AlInGaP True Green InGaN | 587 nm / 525 nm | |
| L-955LYLGC | Yellow AlInGaP Green AlInGaP | 587 nm / 570 nm | |



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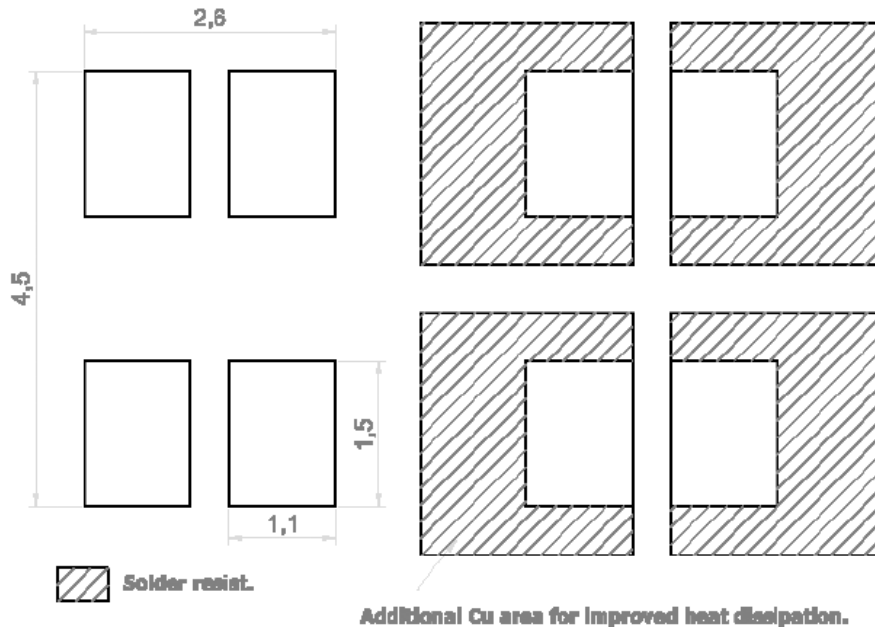
ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

| Parameter | Symbol | Max Rating | | Unit |
|----------------------------------------------------|------------------|------------|-------|------|
| | | AllInGaP | InGaN | |
| DC Forward Current | I _F | 30 | 20 | mA |
| Peak Pulse Current (tp ≤ 10μs, duty cycle = 0.005) | I _{PF} | 1000 | 200 | mA |
| Reverse Voltage | V _R | 5 | | V |
| LED Junction Temperature | T _J | 125 | | °C |
| Operating Temperature Range | T _{OPR} | -40 – 100 | | °C |
| Storage Temperature Range | T _{STG} | -40 – 100 | | °C |

Notes:

- 1) Luminous intensity is measured with an accuracy of ±11%
- 2) Forward voltage is measure with an accuracy of ±0.1V
- 3) Dominant wavelength is measured with an accuracy of ±1nm
- 4) The parts above come in a standard quantity of 2000 pieces/reel

Recommended Solder Pad





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BIN INFORMATION – UE – Red

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|---------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | R | 112.5 – 180.0 | Typ | 2.0 | FULL | 620 – 630 |
| | S | 180.0 – 285.0 | Max | 2.45 | | |
| | | | 01 | 1.55 – 1.85 | | |
| | | | 02 | 1.85 – 2.15 | | |
| | | | 03 | 2.15 – 2.45 | | |

BIN INFORMATION – LI – Red

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|--------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | P | 45.0 – 71.5 | Typ | 2.0 | FULL | 625 – 640 |
| | Q | 71.5 – 112.5 | Max | 2.45 | | |
| | | | 01 | 1.55 – 1.85 | | |
| | | | 02 | 1.85 – 2.15 | | |
| | | | 03 | 2.15 – 2.45 | | |



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BIN INFORMATION – LG – Green

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|--------------|---------------------|-------------|---------------------|---------------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | P | 45.0 – 71.5 | Typ | 2.0 | FULL | 564.5 – 576.5 |
| | Q | 71.5 – 112.5 | Max | 2.45 | W | 564.5 – 567.5 |
| | | | 01 | 1.55 – 1.85 | X | 567.5 – 570.5 |
| | | | 02 | 1.85 – 2.15 | Y | 570.5 – 573.5 |
| | | | 03 | 2.15 – 2.45 | Z | 573.5 – 576.5 |

BIN INFORMATION – UG – Green

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|---------------|---------------------|-------------|---------------------|---------------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | Q | 71.5 – 112.5 | Typ | 2.0 | FULL | 564.5 – 576.5 |
| | R | 112.5 – 180.0 | Max | 2.45 | W | 564.5 – 567.5 |
| | | | 01 | 1.55 – 1.85 | X | 567.5 – 570.5 |
| | | | 02 | 1.85 – 2.15 | Y | 570.5 – 573.5 |
| | | | 03 | 2.15 – 2.45 | Z | 573.5 – 576.5 |



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BIN INFORMATION – LY – Yellow

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|---------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | Q | 71.5 – 112.5 | 01 | 1.55 – 1.85 | FULL | 582 – 594 |
| | R | 112.5 – 180.0 | 02 | 1.85 – 2.15 | W | 582 – 585 |
| | | | 03 | 2.15 – 2.45 | X | 585 – 588 |
| | | | | | Y | 588 – 591 |
| | | | | | Z | 591 – 594 |

BIN INFORMATION – UY – Yellow

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|---------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | R | 112.5 – 180.0 | 01 | 1.55 – 1.85 | FULL | 582 – 594 |
| | S | 180.0 – 285.0 | 02 | 1.85 – 2.15 | W | 582 – 585 |
| | | | 03 | 2.15 – 2.45 | X | 585 – 588 |
| | | | | | Y | 588 – 591 |
| | | | | | Z | 591 – 594 |



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BIN INFORMATION – LB – Blue

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|--------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | P | 45.0 – 71.5 | Typ | 3.7 | FULL | 464 – 476 |
| | Q | 71.5 – 112.5 | Max | 4.25 | W | 464 – 468 |
| | | | 01 | 3.35 – 3.65 | X | 468 – 472 |
| | | | 02 | 3.65 – 3.95 | Y | 472 – 476 |
| | | | 03 | 3.95 – 4.25 | | |

BIN INFORMATION – LPG – True Green

| Symbol | I_V | | V_F | | λ_D | |
|-----------|---------------------|---------------|---------------------|-------------|---------------------|-----------|
| Parameter | Luminous Intensity | | Forward Voltage | | Dominant Wavelength | |
| Condition | $I_F = 20\text{mA}$ | | $I_F = 20\text{mA}$ | | | |
| Unit | mcd | | V | | nm | |
| Binning | Grade | Range | Grade | Range | Grade | Range |
| | R | 112.5 – 180.0 | Typ | 3.7 | FULL | 520 – 536 |
| | S | 180.0 – 285.0 | Max | 4.25 | W | 520 – 524 |
| | | | 01 | 3.35 – 3.65 | X | 524 – 528 |
| | | | 02 | 3.65 – 3.95 | Y | 528 – 532 |
| | | | 03 | 3.95 – 4.25 | Z | 532 – 536 |



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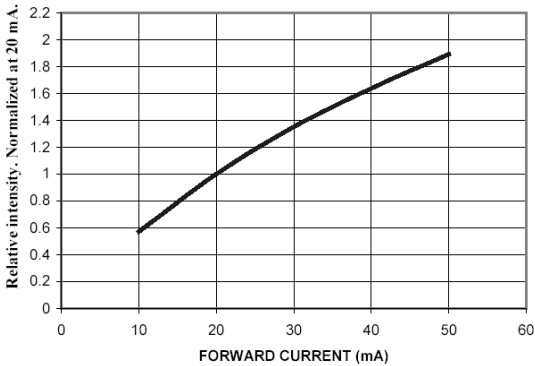
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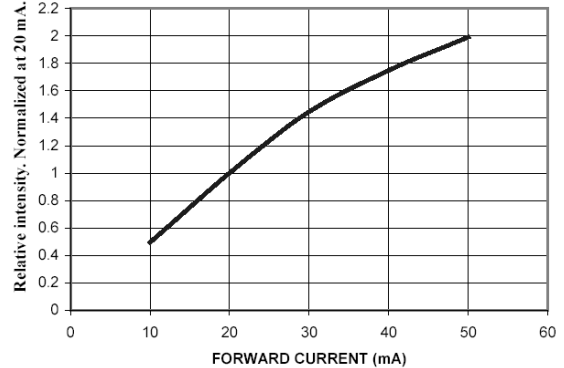
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TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

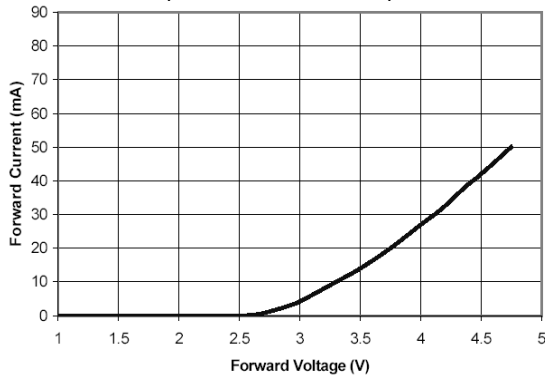
Relative Intensity vs. Forward Current
(True Green, Blue)



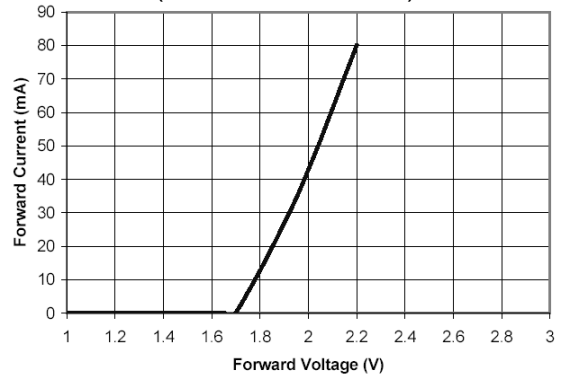
Relative Intensity vs. Forward Current
(Red, Yellow, Green)



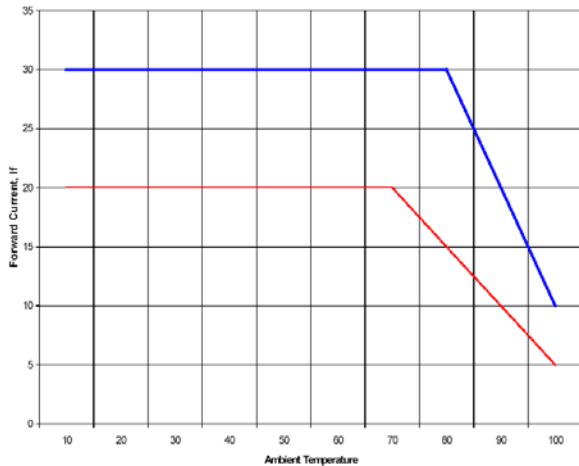
Forward Current vs. Forward Voltage
(True Green, Blue)



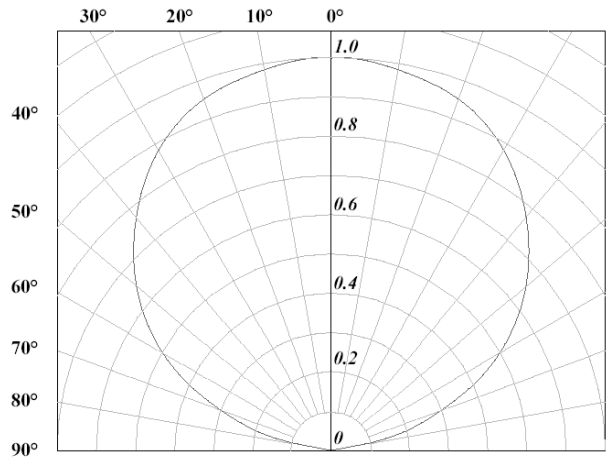
Forward Current vs. Forward Voltage
(Red, Yellow, Green)



Max Forward Current vs. Temperature
(Blue: AlInGaP, Red: InGaN)



Radiation Diagram





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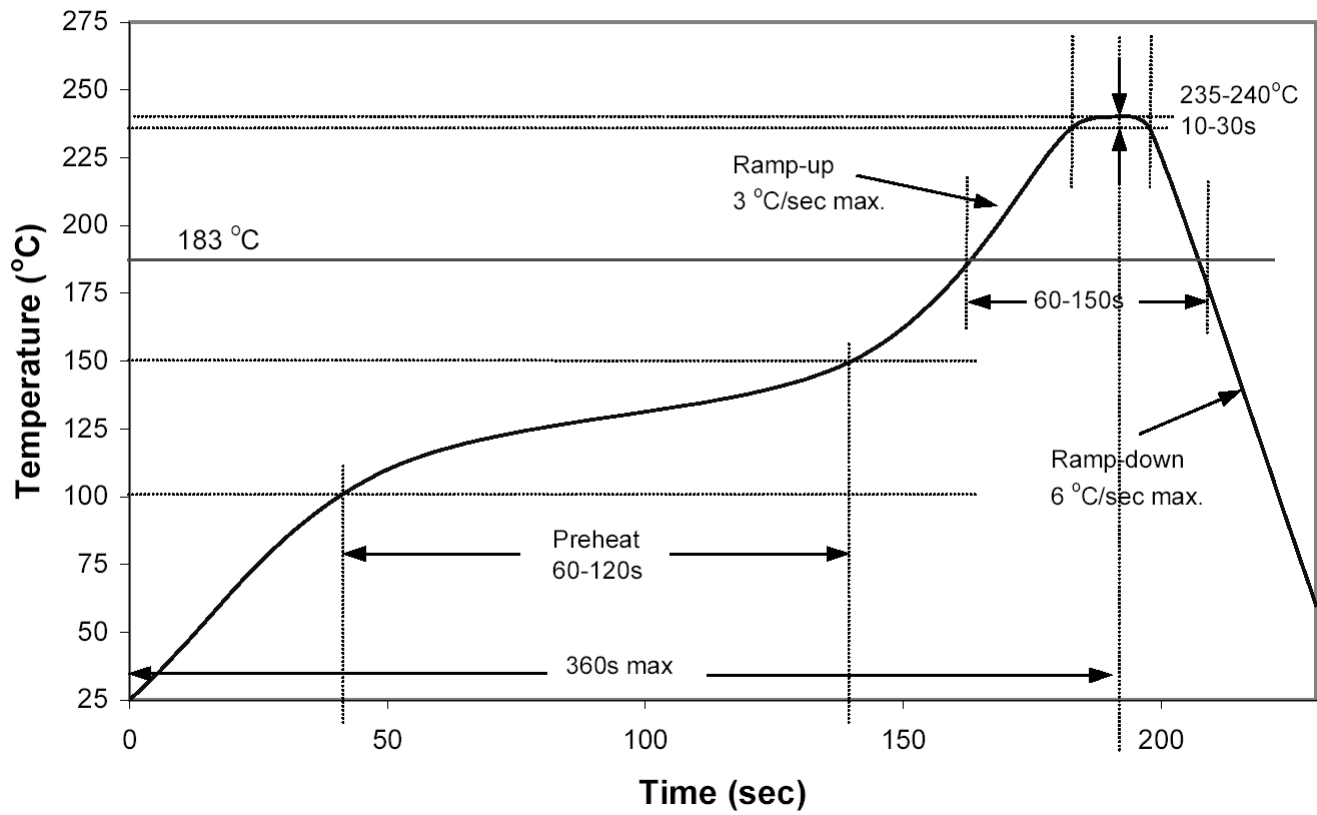
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RECOMMENDED IR-REFLOW SOLDERING PROFILE (acc. to IPC 9501)

Classification Reflow Profile (JEDEC J-STD-020B)





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RECOMMENDED TTW SOLDERING PROFILE (acc. to CECC 00802)

